## IN THE CLAIMS

### *Kindly replace the claims of record with the following full set of claims:*

1.(Currently amended)         A method of determining [[the]] pixel drive signals to be applied to [[the]] pixels of an array of light emitting display elements (2) arranged in rows and columns, with a plurality of [[the]] pixels in a row being supplied with drive current simultaneously along a ~~respective row~~ conductor associated with each of said rows (26), the method comprising:

determining target pixel drive currents corresponding to desired pixel brightness levels based on a model of [[the]] pixel current-brightness characteristics;

modifying the target pixel drive currents to take account of:

[[the]] a voltage on a corresponding ~~the respective~~ row conductor (26) at each pixel within a row resulting from the drive currents drawn ~~from the row conductor~~ by the plurality of pixels[[;]] and [[the]] a dependency of the pixel brightness characteristics on the voltage on [[ the]] a corresponding row conductor at the pixel; and

determining the pixel drive signals from the modified target pixel drive currents.

2.(Currently amended)         The [[A]] method as claimed in claim 1, wherein each pixel is programmed in a first phase and driven in a second phase, and wherein the step of modifying the target pixel drive currents further takes account of any differences in [[the]] a drive current drawn by the pixels between the first and second phases.

3.(Currently amended)         The [[A]] method as claimed in claim 1 , wherein the step of modifying the target pixel drive currents comprises:

applying an algorithm to the target pixel drive currents which represents the relationship between the currents drawn by the pixels in a row and the voltages on the row conductor at the locations of the pixels; and scaling the resulting values of said algorithm using a value representing the dependency of the pixel brightness characteristics on the voltage on the row conductor.

4.(Currently amended)          The [[A]] method as claimed in claim 3, wherein applying an algorithm comprises multiplying a vector of the target pixel drive currents for a row of pixels by the inversion of ~~the~~ matrix **M**, in which:

$$\mathbf{M} = \begin{bmatrix} -2 & 1 & & & \\ 1 & -2 & 1 & & \\ & \ddots & \ddots & \ddots & \\ & & 1 & -2 & 1 \\ & & & 1 & -2 \end{bmatrix},$$

and wherein [[the]] a number of rows and columns of matrix **M** is equal to the number of pixels in [[the]] a corresponding row.

5.(Currently amended)          The [[A]] method as claimed in claim 3, wherein each pixel comprises:

a current source circuit (22,24) which converts an input voltage to a current using a drive transistor (22), and

wherein the scaling comprises using a value including terms derived from:

[[the]] a voltage-current characteristics of the drive transistor (22); and [[the]] a voltage-current characteristics of the light emitting display element (2).

6.(Currently amended)          The [[A]] method as claimed in claim 5, wherein the scaling comprises using a value further including a term derived from [[the]] a resistance (R) of the row conductor.

7.(Currently amended)          The [[A]] method as claimed in claim 6, wherein the scaling comprises using a value $(1-\alpha)R\lambda/(1+\lambda/\mu)$, where

R is the resistance of the row conductor between adjacent pixels;

$\lambda$ is [[the]] a slope of the drain-source current vs. a drain-source voltage curve of the drive transistor;

$\mu$ is [[the]] a slope of the current vs. voltage curve of [[the]] a display element; and

α is [[the]] a ratio of the current drawn by a pixel during a pixel programming phase to the current drawn by the pixel during a display.

8.(Currently amended)        The [[A]] method as claimed in claim 7, wherein the value $(1-\alpha)R\lambda/(1+\lambda/\mu)$ used for scaling uses the slope of the drain-source current vs. drain-source voltage curve of the drive transistor and the slope of the current vs. voltage curve of the display element at the value of the first pixel drive current.

9.(Currently amended)        The [[A]] method as claimed in claim 4, wherein the result of multiplying a vector of the target pixel drive currents for a row of pixels by the inversion of the matrix **M** is obtained by a recursive operation

$$F(n) = F(n-1) + \sum_{j=0}^{n-1} I(j) + F(0),$$

in which:

F(n) is [[the]] a nth term of a the vector result of multiplying the vector of the target pixel drive currents for a row of pixels by the inversion of the matrix **M**, F(0) being the first term; and

*I(j)* is the target current for the jth pixel in a row, the first pixel being j=0.

10.(Currently amended)        The [[A]] method as claimed in claim 9, wherein:

$$F(0) = \frac{1}{N+1} \sum_{j=0}^{N-1} (N-j)I(j),$$

in which:

N is the total number pixels in the row.

11.(Currently amended)        The [[A]] method as claimed in claim 3 , wherein the values representing the dependency of the pixel brightness characteristics on the voltage on the row conductor used for scaling are stored in a look up table (100)

12.(Currently amended)        The [[A]] method as claimed in claim 11, wherein the look up table (100) stores the values for a range of current values.

13.(Currently amended)    The [[A]] method as claimed in claim 11, wherein the values of the look up table are updated over time ~~to enable changes in pixel brightness characteristics over time to be modeled~~.

14. .(Currently amended)    The [[A]] method as claimed in claim 13, wherein updating of the look up table values is carried out based on analysis of the characteristics of pixel compensation modules (110, 112, 114) of the display.

15.(Cancelled)

16.(Currently amended)    A display device comprising an active matrix array of current-addressed light emitting display elements (2) arranged in rows and columns, comprising:

compensation circuitry for modifying ~~the~~ target pixel drive currents to take account of [[the]] a voltage on conductors associated with each of said rows ~~the respective row conductor~~ (26) at each pixel resulting from ~~the~~ currents drawn from the row conductor by the plurality of pixels and a ~~the~~ dependency of ~~the pixel~~ a brightness characteristics associated with a corresponding pixel on the voltage on the row conductor at the pixel, the compensation circuitry comprising:

means (60,62,64,66,70,72,74,76,78,80,82,90,92) for applying an algorithm to the target pixel drive currents ~~which represents the relationship between the currents drawn by the pixels in a row and the voltages on the row conductor at the locations of the pixels~~; and

means (100,104) for scaling the target drive currents ~~resulting values~~ using a value representing the dependency of the pixel brightness characteristics on the voltage on the row conductor.

17.(Currently amended)    The [[A]] device as claimed in claim 16, wherein the means for applying an algorithm derives values corresponding to the multiplication of a vector

of the target pixel drive currents for a row of pixels by the inversion of the matrix **M**, in which:

$$\mathbf{M} = \begin{bmatrix} -2 & 1 & & & \\ 1 & -2 & 1 & & \\ & \ddots & \ddots & \ddots & \\ & & 1 & -2 & 1 \\ & & & 1 & -2 \end{bmatrix},$$

and wherein [[the]] a number of rows and columns of matrix **M** is equal to [[the]] a number of pixels in [[the]] a row.

18.(Currently amended)        The [[A]] device as claimed in claim 16, wherein each pixel comprises:

[[the]] a current source circuit (22,24) which converts an input voltage to a current using a drive transistor (22), and wherein the means for scaling uses a value including terms derived from:

[[the]] a current-voltage characteristics of the drive transistor; and [[the]] a voltage-current characteristics of the light emitting display element.

19.(Currently amended)        The [[A]] device as claimed in claim 18, wherein the drive transistor (22) and the light emitting display element (2) of each pixel are in series between the row conductor (26) and a common line.

20.(Currently amended)        The [[A]] device as claimed in claim 19, wherein the voltage scaling uses a value including terms derived from [[the]] a drain-source voltage vs. a drain-source current characteristics of the drive transistor.

21.(Currently amended)        The [[A]] device as claimed in claim 18, wherein the means for scaling uses a value further including a term derived from [[the]] a resistance (R) of [[the]] a corresponding row conductor.

22.(Currently amended)        The [[A]] device as claimed in claim 21, wherein the means for scaling (100) uses a value $(1-\alpha)R\lambda/(1+\lambda/\mu)$, where:

   R is the resistance of the row conductor between adjacent pixels;

   $\lambda$ is [[the]] a slope of the current vs. voltage curve of the drive transistor;

   $\mu$ is [[the]] a slope of the current vs. voltage curve of the display element; and

   $\alpha$ is [[the]] a ratio of the current drawn by a pixel during a pixel programming phase to [[the]] a current drawn by the pixel during display.


23.(Currently amended)        The [[A]] device as claimed in claim 17, wherein the means for applying an algorithm derives values by a recursive operation

$$F(n) = F(n-1) + \sum_{j=0}^{n-1} I(j) + F(0),$$

   in which:

   F(n) is [[the]] an nth term of a the vector result of multiplying the vector of the target pixel drive currents for a row of pixels by the inversion of the matrix **M**, F(0) being the first term; and

   *I(j)* is [[the]] a target current for the jth pixel in a row, the first pixel being j=0.


24.(Currently amended)        The [[A]] device as claimed in claim 23, wherein:

$$F(0) = \frac{1}{N+1} \sum_{j=0}^{N-1} (N-j)I(j),$$

   in which:

   N is [[the]] a total number pixels in the row.


25.(Currently amended)        The [[A]] A device as claimed in claim  16, wherein the means for scaling (100) comprises a look up table.


26.(Currently amended)        The [[A]] device as claimed in claim 25, further comprising at least one pixel compensation module (110,112,114), and further comprising means for updating the values of the look up table to enable changes in pixel brightness

characteristics over time ~~to be modeled based on analysis of the characteristics of the pixel compensation module~~.

27.(Currently amended)      Compensation circuitry for modifying target pixel drive currents for a display device which comprises an active matrix array of current-addressed light emitting display elements arranged in rows and columns having respective row and column conductors, the compensation circuitry comprising:

means (60,62,64,66,70,72,74,76,78,80,82,90,92) for applying an algorithm to the target pixel drive currents which represents the relationship between the currents drawn by the pixels in a row and the voltages on the row conductor at [[the]] a corresponding location ~~locations~~ of the pixels; and means (100,104) for scaling the resulting values using a value representing [[the]] a dependency of [[the]] a pixel brightness characteristics on the voltage on the row conductor, ~~the scaling taking account of the voltage on the respective row conductor at each pixel resulting from the currents drawn from the row conductor by the plurality of pixels and the dependency of the pixel brightness characteristics on the voltage on the row conductor at the pixel.~~

28.(Currently amended)      Compensation circuitry as claimed in claim 27, wherein the means for applying an algorithm derives values corresponding to the multiplication of a vector of the target pixel drive currents for a row of pixels by the inversion of the matrix $\mathbf{M}$, in which:

$$\mathbf{M} = \begin{bmatrix} -2 & 1 & & & \\ 1 & -2 & 1 & & \\ & \ddots & \ddots & \ddots & \\ & & 1 & -2 & 1 \\ & & & 1 & -2 \end{bmatrix},$$

and wherein [[the]] a number of rows and columns of matrix $\mathbf{M}$ is equal to [[the]] a number of pixels in [[the]] a row.

29.(Currently amended)      The compensation ~~Compensation~~ circuitry as

claimed in claim 27, wherein the means for scaling comprises a look up table.